Energy Trust Shade Effect Evaluation Form

Job Name: ______________________
Contractor: ____________________
Date: __________________________
Array Tilt: ____________________
Array Orientation: _____________
Zip Code of Site: ______________

The sun path chart to the right is for a solar electric system located in Portland, Oregon tilted 22.5 degrees with a 180 degree azimuthal orientation. The annual AC output for a 1 kW peak DC system with these characteristics is about 1103 kWhr/yr.

For comparison, a 1 kW DC peak system with near optimum tilt and orientation (32 degree tilt and 190 degree azimuth) will produce approximately 1119 kWhr/yr.

Local Production Capacity = 1248 kWhr/yr.

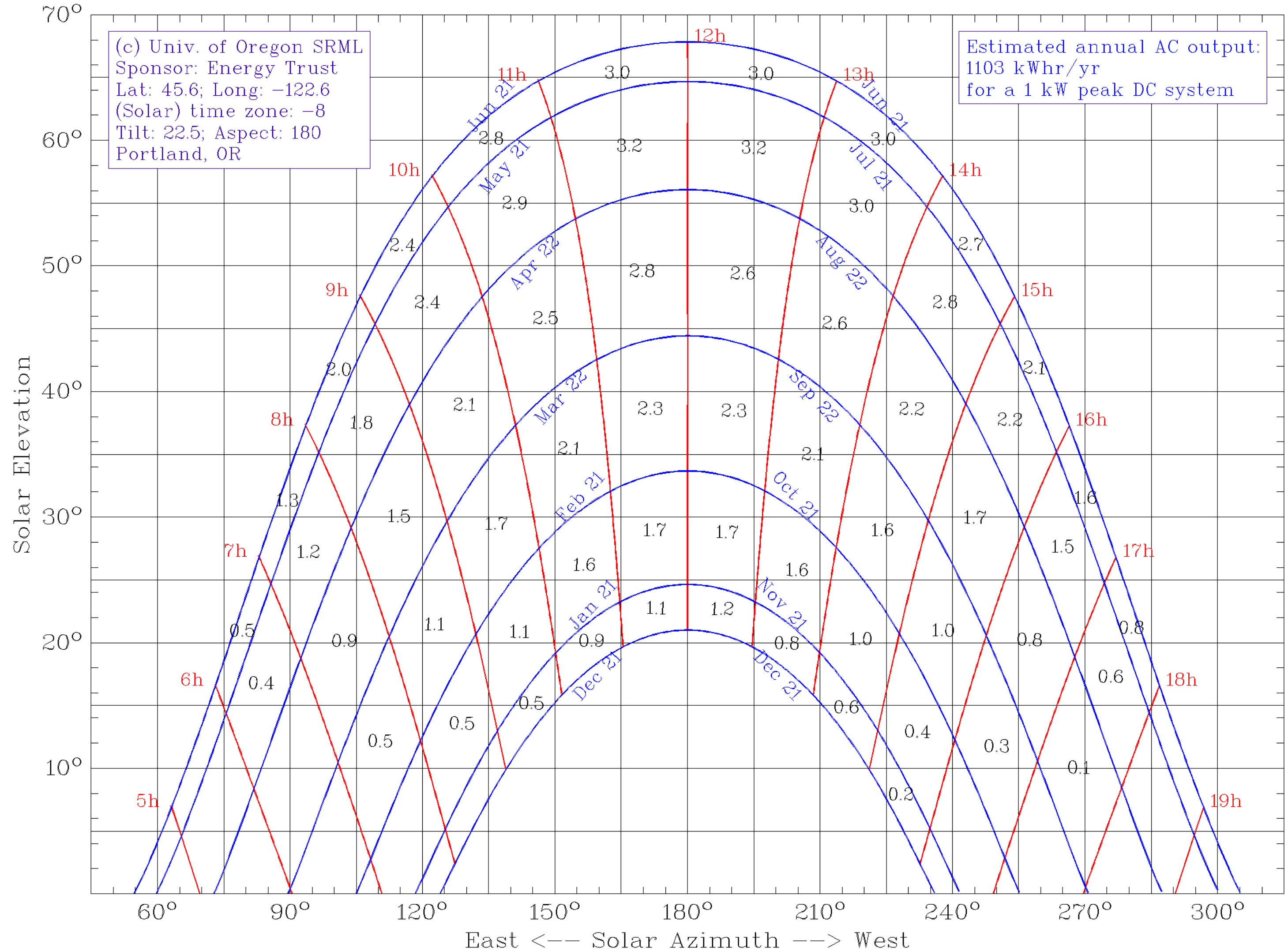
At Portland, a system oriented as in the sun path chart to the right will produce 98% of the annual electricity produced by an optimally oriented system.

Draw the horizon on the sun path chart and shade obstructed areas. To calculate the percent reduction due to shading, enter the percentage of system power output shown on the sun path chart for areas shaded by obstructions into the table on the right.

For example, assume the percentage of system power output from 7:00 to 8:00 between September 22 and October 21 is 0.4%, and 50% of that period is shaded. Enter 0.2% in the column under 7-8 and the row labeled Feb-Mar on one side and Sep-Oct on the other. Enter zero for each box where there is no shading. Note that hours are in solar time.

Sum the shading values in each column and enter the total in the bottom row. Sum the bottom row to determine the percent annual shading.

Pct Annual Shading: __________



Period/Hr	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	Period/Hr
May-Jun															Jun-Jul
Apr-May															Jul-Aug
Mar-Apr															Aug-Sep
Feb-Mar															Sep-Oct
Jan-Feb															Oct-Nov
Dec-Jan															Nov-Dec
Sum of Hourly Shading															Sum of Hourly Shading